

On a New Antipatharian
Hexapathes heterosticha, n. g. et n. sp.

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Among the collection of Antipatharia in the Zoological Institute, Science College, there is an interesting species which cannot be referred to any of the known genera of the group. It is represented by several specimens, some being labeled as having been obtained in the Sagami-Bay from a depth of 400 fathoms. Superficial examination points that this form is very closely allied to the genus *Bathypathes*, especially in reference to the mode of branching and to the form of polyps, so that I took it at first for an aberrant form of that genus. But upon further examination of the polyp body, I have found that it does not possess sulco- and sulculolateral mesenteries,¹ the presence of which, according to Schultze's system, constitutes a highly important character of the above mentioned genus. The specimens in question can not therefore be referred to *Bathypathes*. Hence I propose to institute for them a new genus, *Hexapathes*, placing it in the Cladopathinæ², the third subfamily of Antipathidæ.

The following description is based upon a specimen which was taken as the type.

The stem is simple, almost cylindrical and arises from a small basal expansion. Its total length is 20 cm.; the basal stem is 2 cm. in length, and 2 mm. in diameter in the upper parts. The remaining parts of the stem are provided with numerous simple branchlets. Of these branchlets

1) Abhandl. der Senckenbergischen Naturforschenden Gesellschaft, 23.

2) In accordance with the rules of nomenclature of 1904, I propose the new name Cladopathinæ for the subfamily Hexamerota Schultze.

two kinds may be distinguished: (a) branchlets probably homologous with the pinnules of *Bathypathes* and *Schizopathes*, 14 cm. in maximum length, 0.65 mm. in maximum diameter, arranged in two lateral longitudinal rows at intervals of 2.5–6 mm., and mostly directed obliquely above, the tips of these branchlets describing an ellipse of 16×19 cm.; (b) those which are directed horizontally and are very densely set on the anterior surface of the stem in the same parts as the former kind, some of them growing to a length of 10 cm., but the majority remaining quite short.

The axis of all the branchlets has 6–9 longitudinal rows of spines which are arranged at intervals of 0.35–0.6 mm. No definite mode of

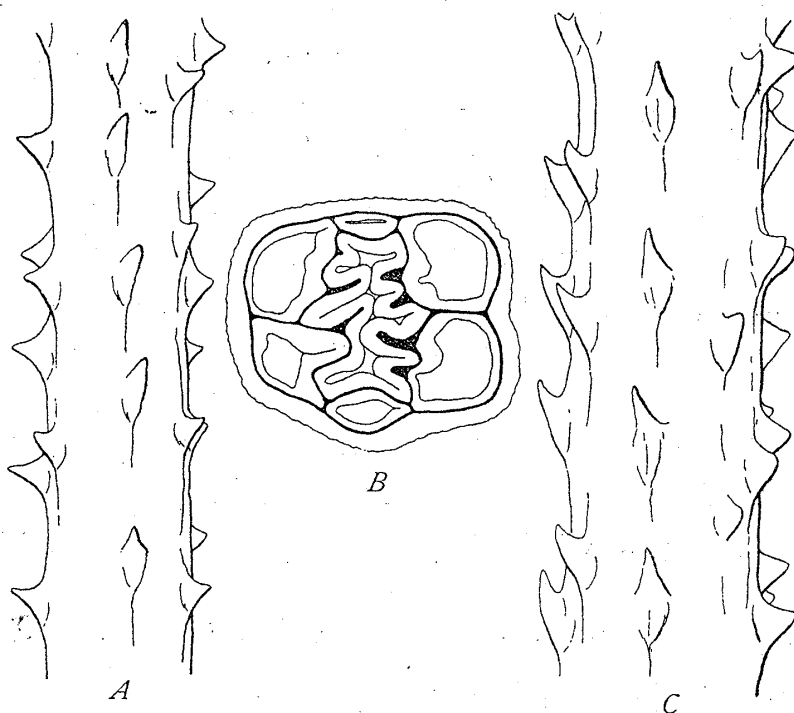


Fig. A. Portion of the axis of a branch, viewed laterally, anterior side to the right (type). $\times 50$

Fig. B. Transverse section of a polyp through the peristomal projection immediately beneath the tip (type). $\times 50$

Fig. C. Portion of the axis of a branch of a larger specimen, viewed laterally, anterior side to the left. $\times 50$

their arrangement can be made out. The spines on the anterior side of the axis (polyp-bearing side) are conical, laterally compressed and more or less turned upwards, while those on the posterior side are usually not so tall as those on the anterior side and stand perpendicularly to the axis. The anterior spines measure 0.05–0.10 mm., the posterior ones not more than 0.07 mm. in height.

As to the soft parts, the polyps are arranged on the anterior side of both the stem and branchlets in an uniserial manner. They are large, and their transverse axis is longer than the sagittal, being elongated to a length of 5–9 mm. (usually 7 mm.). The median portion of polyps (=gastrozoid of Brook) is provided with a high cylindrical projection of peristome, the tentacles being given off at about the level of the lower end of the long stomodæum (which almost reaches the axis sheath). With regard to the mesenteries there exist only two pairs of directives and a pair of laterals. Even in the upper parts of the peristomal projection, no other mesenteries are found.

The entoderm and mesoglœa are found very much contracted in the specimen¹, while the ectoderm remains in a distended state, leaving a wide space between the mesoglœa and the ectoderm. The ectoderm has batteries of very large nematocysts, the largest of these reaching to a length of 40 μ . The mesoglœa is poorly developed, containing no stellate cells, such as were described by Brook from *Cladopathes plumosa*. The other specimens agree very well in their salient features with the type specimen above described.

As is obvious from the foregoing description, the new form cannot be referred to any of the known genera. Between this form and *Cladopathes plumosa*, the only hitherto known species of Cladopathinæ, there exists no similarity respecting the mode of branching—the latter species being characterized by irregular pinnules which are very probably to be homologized with the pinnules of other genera, such as *Schizopathes*. It is interesting to note that *Bathypathes* contains a

1) The specimen has been kept in formalin.

form, *B. lyra* Brook, which resembles the specimens under consideration with respect to the mode of branching. In addition to lateral pinnules, this species has a median inconspicuous row of bristle-like branchlets, which give the colony an appearance quite similar to that of *Hexapathes*. The resemblance seems to indicate an intimate natural relationship between these two forms, rather than a mere accidental convergence. And now there remains to be confirmed whether or not *Bathypathes lyra* has really ten mesenteries as was stated by Brook in the diagnosis of the Schizopathinæ. Nowhere in his report have I been able to find any special description of that species concerning this point. If the latter species has really ten mesenteries, it will be reasonable to doubt, that the presence or absence of the sulco- and sulculolateral mesenteries is a characteristic of great taxonomic value. In the present state of our knowledge, however, we have but to follow Schultze's system and I may place *Hexapathes* in the Cladopathinæ, as the second genus of the subfamily. In conclusion I will draw up a diagnosis of the new genus, selecting the main characteristics of the form for the purpose.

Hexapathes n. g.

Stem simple, with simple lateral pinnules arranged in two longitudinal rows, and with simple branchlets borne on the anterior surface of stem; spines of axis short, turned upwards; polyps elongate in transverse axis; mouth situated on a high projection of peristome; stomodæum long, nearly reaching the axis sheath; sagittal tentacles given off from the level of the lower end of stomodæum; mesenteries six in number.

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